Combine f(x) and g(x) to create f(g(x)) and g(f(x)).

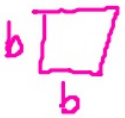
$$f(x) = 2x - 2 \qquad g(x) = x^2 + 4$$

$f(g(x)) = 2(x^2 + 4) - 2$

$g(f(x)) = (2x - 2)^2 + 4$

3.1 Factoring $x^2 + bx + c$ 1/29/14

Identify the properties of a quadratic trinomial.

quadratic -  $b \cdot b = b^2$ the highest power is 2

trinomial - three parts (terms)

general form -

$y = ax^2 + bx + c$ $X = ay^2 + by + c$

Exponent

Coefficient

Leading coefficient

Factors

Second-degree polynomial

Terms

Constant

3.1 Factoring $x^2 + bx + c$

1/29/14

$x^2 + 4x + 1$

quadratic trinomial

$x^3 + 9x + 2$

not a quadratic trinomial

quadratic trinomial

$5x - 9$

not a quadratic trinomial

$6x^2 - 2x - 8$

quadratic trinomial

not a quadratic trinomial

$3x^2 + 4x - 11$

quadratic trinomial

$7x^2 + 5$

not a quadratic trinomial

3.1 Factoring $x^2 + bx + c$ 1/29/14

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient of 1. I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

3.1 Factoring $x^2 + bx + c$

1/29/14

Factor a binomial:

$2x + 16$

$2(1x + 8)$

$2(x + 8)$

$14x - 42$

$7(2x - 6)$

$7 \cdot 2(x - 3)$

$14(x - 3)$

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient of 1.

3.1 Factoring $x^2 + bx + c$

1/29/14

Factor a binomial:

$$2x^2 - 3x$$

$x(2x-3)$

$$6x^3 + 12x$$

$2x(3x^2+6)$

$3 \cdot 2x(x^2+2)$

$6x(x^2+2)$

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient of 1.

Find the domain of *g(f(x))*.

Can't square root a negative

$$g(f(x)) = \sqrt{x+1}$$

$x \geq -1$

$x + 1 = 0$

$-1 \quad -1$

$x = -1$

D: $x \geq -1$

$$g(f(x)) = \sqrt{x-4} - 1$$

$x \geq 4$

$x - 4 = 0$

$+4 \quad +4$

$x = 4$

D: $x \geq 4$

$$g(f(x)) = \frac{2}{\sqrt{x+6}}$$

$x > -6$

$x + 6 = 0$

$-6 \quad -6$

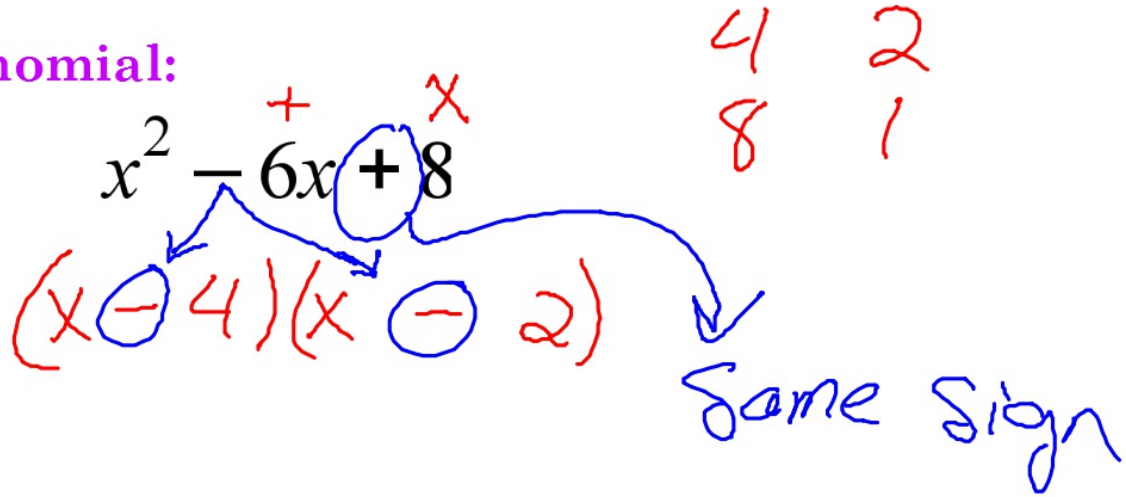
$x = -6$

D: $x > -6$

3.1 Factoring $x^2 + bx + c$

1/30/14

Factor a trinomial:



IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient of 1.

3.1 Factoring $x^2 + bx + c$

1/30/14

Factor a trinomial:

$$x^2 + 7x + 12$$

$(x + 4)(x + 3)$

4 3

6 2

12 1

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient of 1.

3.1 Factoring $x^2 + bx + c$

1/30/14

Factor a trinomial:

Larger → + Different → −

$$x^2 + 4x - 32$$

8	4
16	2
32	1

$$(x + 8)(x - 4)$$

Want more practice? 3.1.2

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient of 1.

3.1 Factoring $x^2 + bx + c$

1/30/14

Factor a trinomial:

$$(x \pm p)(x \pm q) \qquad y = x^2 + bx + c$$

$$x^2 + qx + px + pq$$

$$x^2 + (q+p)x + pq$$

$$q + p = b$$

$$pq = c$$

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient of 1.

3.1 Factoring $x^2 + bx + c$

1/30/14

Factors of a trinomial:

$$(x + 2)(x + 4)$$

$x^2 + 4x + 2x + 8$

$x^2 + 6x + 8$

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient of 1.

3.1 Factoring $x^2 + bx + c$

1/30/14

Factors of a trinomial:

$$(x-2)(x-4)$$

$x^2 - 4x - 2x + 8$

$x^2 - 6x + 8$

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient of 1.

3.1 Factoring $x^2 + bx + c$

1/30/14

Factors of a trinomial:

$$(x + 5)(x - 1)$$

$$x^2 - 1x + 5x - 5$$

$$x^2 + 4x - 5$$

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient of 1.

3.1 Factoring $x^2 + bx + c$

1/30/14

Factors of a trinomial:

$$(x-5)(x+1)$$

$x^2 + 1x - 5x - 5$

$x^2 - 4x - 5$

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient of 1.

Complete quizzes 3.1.3 & 3.1.4

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient of 1.

Factor this quadratic trinomial:

$$x^2 + 13x + 12$$

$(x + 12)(x + 1)$

6 2
4 3
, 2 1

3.2 Factoring $ax^2 + bx + c$

2/03/14

Identify the steps used to factor a trinomial that has a leading coefficient other than 1.

2/03/14

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient that is not 1 and identify a trinomial which has a given set of factors. I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

3.2 Factoring $ax^2 + bx + c$

2/03/14

Factor this trinomial:

$$-x^2 - 5x + 6$$

$-1(x^2 + 5x - 6)$

$-1(x + 6)(x - 1)$

$-3 \quad 2$

$-6 \quad 1$

$3 \quad -2$

$6 \quad -1$

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient that is not 1 and identify a trinomial which has a given set of factors.

3.2 Factoring $ax^2 + bx + c$

2/03/14

Factor this trinomial:

$$-2x^2 - 18x - 40$$

$$-2(x^2 + 9x + 20)$$

$$-2(x + 5)(x + 4)$$

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient that is not 1 and identify a trinomial which has a given set of factors.

3.2 Factoring $ax^2 + bx + c$

2/03/14

Factor this trinomial:

$$3x^3 + 27x^2 + 42x$$

$3x(x^2 + 9x + 14)$

$3x(x + 7)(x + 2)$

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient that is not 1 and identify a trinomial which has a given set of factors.

3.2 Factoring $ax^2 + bx + c$

2/03/14

Factor this trinomial:

$$2x^2 + 3x + 1$$

2 1 1 1

$(2x + 1)(1x + 1)$

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient that is not 1 and identify a trinomial which has a given set of factors.

3.2 Factoring $ax^2 + bx + c$

2/03/14

Factor this trinomial:

$$8x^2 - 19x + 6$$

4 2
1 8

3 2
6 1

$(8x - 3)(1x - 2)$

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient that is not 1 and identify a trinomial which has a given set of factors.

3.2 Factoring $ax^2 + bx + c$

2/03/14

Factor this trinomial:

$$3x^2 + 11x - 20$$

3 1

$3 \cdot 5 = 15$

$1 \cdot 4 = -4$

11

$(1x + 5)(3x - 4)$

5 4

10 2

20 1

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient that is not 1 and identify a trinomial which has a given set of factors.

3.2 Factoring $ax^2 + bx + c$

2/04/14

Factor this trinomial:

$$2x^2 + 10x + 8$$

$$2(x^2 + 5x + 4)$$

$$2(x + 4)(x + 1)$$

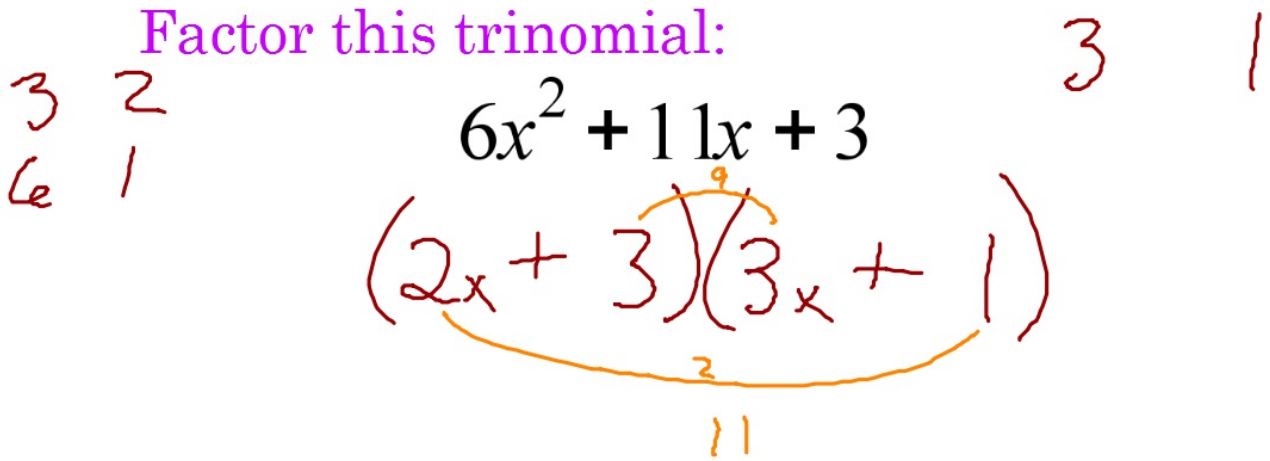
IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient that is not 1 and identify a trinomial which has a given set of factors.

3.2 Factoring $ax^2 + bx + c$

2/04/14

Factor this trinomial:

$$6x^2 + 11x + 3$$



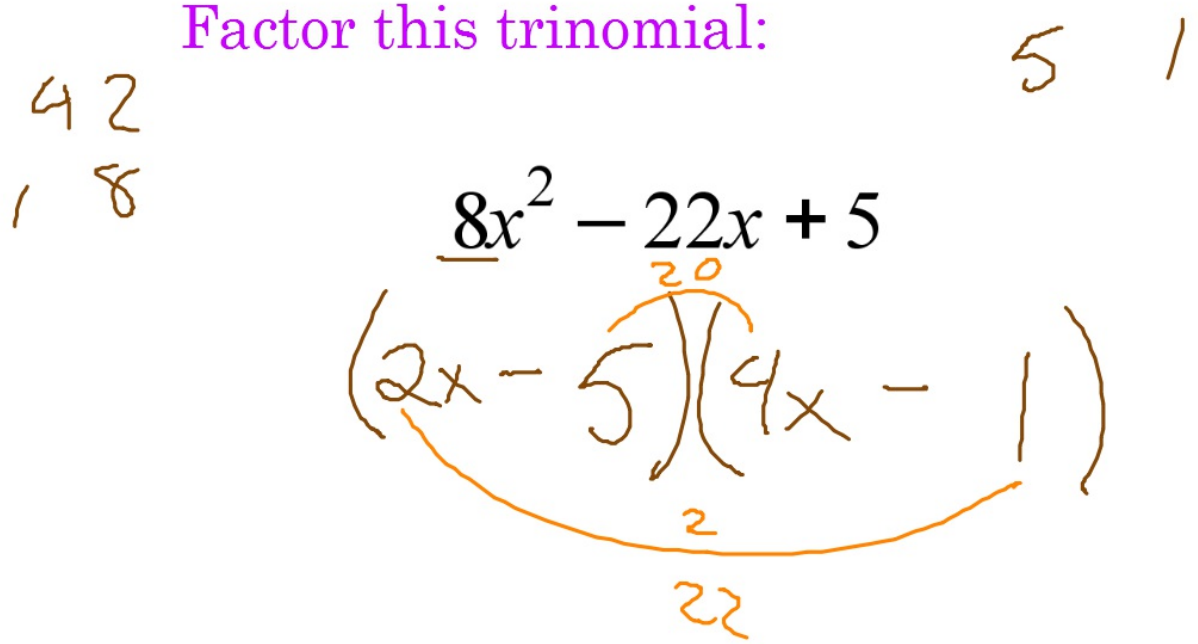
IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient that is not 1 and identify a trinomial which has a given set of factors.

3.2 Factoring $ax^2 + bx + c$

2/04/14

Factor this trinomial:

$$8x^2 - 22x + 5$$



IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient that is not 1 and identify a trinomial which has a given set of factors.

3.2 Factoring $ax^2 + bx + c$

2/04/14

Factor this trinomial:

$$12x^2 - 17x - 7$$

4 3
6 2
12 1

1 7

$(4x - 7)(3x + 1)$

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient that is not 1 and identify a trinomial which has a given set of factors.

3.2 Factoring $ax^2 + bx + c$

2/04/14

Given these factors, find the trinomial:

$$(2x + 3)(3x + 7)$$

$$6x^2 + 14x + 9x + 21$$

$$6x^2 + 23x + 21$$

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient that is not 1 and identify a trinomial which has a given set of factors.

Given these factors, find the trinomial:

$$-2(3x + 7)(2x - 1)$$

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient that is not 1 and identify a trinomial which has a given set of factors.

Complete quizzes 3.2.3 & 3.2.4

IWBAT identify the binomial factors of a quadratic trinomial with a leading coefficient that is not 1 and identify a trinomial which has a given set of factors.

Factor this trinomial:

$$4x^2 - 4x - 8$$

$4(x^2 - x - 2)$

$4(x - 2)(x + 1)$

3.3 Special Cases of Trinomials

2/06/14

Identify the factors of a polynomial that represents the difference of two squares.

$x^2 = x \cdot x$

$2^2 = 2 \cdot 2$

✓ $x^2 - 9$

✗ $x^2 + 9$

✗ $x^2 - 15$

$x^2 - 2^2$

$x^2 - 4$

✓ $x^4 - 9$

$x^4 = x^2 \cdot x^2$

✗ $x^9 - 9$

Factor:

$9x^2 - 16$

$+0x$

$(3x+4)(3x-4)$

$9x^2(-12x+12x)-16$

$0x$

$9x^2-16$

$36y^2 - 64$

$(6y+8)(6y-8)$

IWBAT identify the factors of a perfect square trinomial and identify the polynomial representing the difference of two squares, given the set of binomial factors.

3.3 Special Cases of Trinomials

2/06/14

IWBAT identify the factors of a perfect square trinomial and identify the polynomial representing the difference of two squares, given the set of binomial factors. I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

3.3 Special Cases of Trinomials

$16 = 4 \cdot 4$

$x^2 = x \cdot x$

Identify the factors of a polynomial that represents a perfect square trinomial.

$(a+b)(a+b)$

$a^2 + ab + ab + b^2$

$a^2 + 2ab + b^2$

$(a-b)(a-b)$

$a^2 - ab - ab + b^2$

$a^2 - 2ab + b^2$

IWBAT identify the factors of a perfect square trinomial and identify the polynomial representing the difference of two squares, given the set of binomial factors.

3.3 Special Cases of Trinomials

2/06/14

Factor:

$4 \cdot 4 = 4^2$ $a^2 + 2ab + b^2$

$(a+b)(a+b)$

$(a+b)^2$

$a^2 - 2ab + b^2$

$(a-b)(a-b)$

$(a-b)^2$

a minus b, the quantity squared

IWBAT identify the factors of a perfect square trinomial and identify the polynomial representing the difference of two squares, given the set of binomial factors.

3.3 Special Cases of Trinomials

2/06/14

Factor:

$x^2 + 12x + 36$

$(x+6)(x+6)$

$(x+6)^2$

$9x^2 - 24x + 16$

$(3x-4)(3x-4)$

$(3x-4)^2$

~~$x+6^2$~~

~~$x+36$~~

IWBAT identify the factors of a perfect square trinomial and identify the polynomial representing the difference of two squares, given the set of binomial factors.

3.3 Special Cases of Trinomials

2/06/14

Factor: $a^2 + 2ab + b^2$

$x^8 - 16x^4 + 64$

$x^4 \cdot -8 \cdot 2 = -16x^4$

$(x^4 - 8)^2$

$4x^2 + 48x + 144$

$(2x + 12)(2x + 12)$

$(2x + 12)^2$

$x \; x^8 - 16x^6 + 64$

$\checkmark \; x^{12} - 16x^6 + 64$

$x \; x^9 + 12x^3 + 16$

$\checkmark \; x^6 + 8x^3 + 16$

$x^3 \cdot 4 \cdot 2$

IWBAT identify the factors of a perfect square trinomial and identify the polynomial representing the difference of two squares, given the set of binomial factors.

Complete quizzes 3.3.3 & 3.3.4

IWBAT identify the factors of a perfect square trinomial and identify the polynomial representing the difference of two squares, given the set of binomial factors.

Factor difference of squares

$144y^2 - 64$

$(12y + 8)(12y - 8)$

$49x^2 + 49$

$(7x + 7)(7x + 7)$

$49x$

$49x$

$98x$

$625x^2 - 36$

$(25x + 6)(25x - 6)$

3.4 Solving Quadratic Equations

2/07/14

Identify the standard form of a quadratic equation given a quadratic equation that is not yet in standard form.

$$16 = x^2 - 8x$$

ax^2+bx+c

$-16 \qquad -16$

$$0 = x^2 - 8x - 16$$

3.4 Solving Quadratic Equations

2/07/14

Identify the standard form of a quadratic equation given a quadratic equation that is not yet in standard form.

$$-5x^2 - 10 = -7x^2 + 8x$$

$+5x^2 \qquad +5x^2$

$$-10 = -2x^2 + 8x$$

$+10 \qquad +10$

$$0 = (-2x^2 + 8x + 10) \cdot -1$$

$$0 = 2x^2 - 8x - 10$$

3.4 Solving Quadratic Equations

2/07/14

Identify the standard form of a quadratic equation given a quadratic equation that is not yet in standard form.

$$(x+5)^2+16x=0$$

$(x+5)(x+5)$

$x^2+5x+5x+25+16x=0$

$x^2+26x+25=0$

IWBAT apply the zero product rule to identify the solutions to a quadratic equation and identify the solutions of a quadratic equation containing a perfect square trinomial not equal to zero. I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

Find the roots (x-intercepts).

$$y = (x+3)(x-2)$$

$$0 = (x+3)(x-2)$$

$$x+3=0 \qquad x-2=0$$
$$-3 \quad -3 \qquad +2 \quad +2$$
$$x=-3 \qquad x=2$$

IWBAT apply the zero product rule to identify the solutions to a quadratic equation and identify the solutions of a quadratic equation containing a perfect square trinomial not equal to zero.

Find the roots.

~~2, 2~~

1, 4

$y = 4x^2 - x - 3$

$0 = 4x^2 - x - 3$

$0 = (1x - 1)(4x + 3)$

ZPR

$1x - 1 = 0$ $\quad$ $4x + 3 = 0$

$+1 \quad +1$ $\quad$ $-3 \quad -3$

$x = 1$ $\quad$ $\frac{4x}{4} = \frac{-3}{4}$

$x = -\frac{3}{4}$

IWBAT apply the zero product rule to identify the solutions to a quadratic equation and identify the solutions of a quadratic equation containing a perfect square trinomial not equal to zero.

Find the roots.

$$y = x^2 - 5x + 6$$

$0 = x^2 - 5x + 6$

$0 = (x - 3)(x - 2)$

$x - 3 = 0$ $\quad$ $x - 2 = 0$

$+3 \quad +3$ $\quad$ $+2 \quad +2$

$x = 3$ $\quad$ $x = 2$

IWBAT apply the zero product rule to identify the solutions to a quadratic equation and identify the solutions of a quadratic equation containing a perfect square trinomial not equal to zero.

Find the roots.

$$2x^2 - 3x + 1$$

$0 = 2x^2 - 3x + 1$

$0 = (2x - 1)(1x - 1)$

$2x - 1 = 0$ $\quad$ $x - 1 = 0$

$+1 \quad +1$ $\quad$ $+1 \quad +1$

$\frac{2x}{2} = \frac{1}{2}$ $\quad$ $x = 1$

$x = \frac{1}{2}$

Done by: Alex Berio

IWBAT apply the zero product rule to identify the solutions to a quadratic equation and identify the solutions of a quadratic equation containing a perfect square trinomial not equal to zero.

Find the roots.

$$x^2 + 2x + 1 = 5$$

$-5 \quad -5$

$x^2+2x+1-5=0$ ☹

$x^2+2x-4=0$ ☺

$(x+\quad)(x-\quad)$

$$x^2 + 2x + 1 = 5$$

$(x+1)(x+1)=5$

$(x+1)^2=5$

$\sqrt{\quad}$

$x+1=\pm\sqrt{5}$

$-1 \quad -1$

$x=-1\pm\sqrt{5}$

$-\sqrt{5}-1$

IWBAT apply the zero product rule to identify the solutions to a quadratic equation and identify the solutions of a quadratic equation ~~contain~~ containing a perfect square trinomial not equal to zero.

Find the roots.

$$x^2 - 12x + 36 = 8$$

$$(x-6)(x-6) = 8$$

$$\sqrt{(x-6)^2} = \pm\sqrt{8}$$

$$x - 6 = \pm 2\sqrt{2}$$

$$+6 \quad +6$$

$$x = \pm 2\sqrt{2} + 6$$

$$2\sqrt{2} + 6$$

$$-2\sqrt{2} + 6$$

IWBAT apply the zero product rule to identify the solutions to a quadratic equation and identify the solutions of a quadratic equation containing a perfect square trinomial not equal to zero.

5.5

1.25

Find the roots. $4x^2 - 20x + 25 = 8$

$(2x-5)(2x-5) = 8$

$\sqrt{(2x-5)^2} = \sqrt{8}$

$2x - 5 = \pm 2\sqrt{2}$

$+5 \quad +5$

$\frac{2x}{2} = \frac{+2\sqrt{2}+5}{2}$ $\quad \frac{-2\sqrt{2}+5}{2}$

$x = \frac{+2\sqrt{2}+5}{2}$

$x = \frac{-2\sqrt{2}+5}{2}$

$x = -\sqrt{2} + \frac{5}{2}$

IWBAT apply the zero product rule to identify the solutions to a quadratic equation and identify the solutions of a quadratic equation containing a perfect square trinomial not equal to zero.

Vocabulary: 3.4.1 p.27
More practice: 3.4.2

Complete quizzes 3.4.3, 3.4.4, & 3.4.5.

IWBAT apply the zero product rule to identify the solutions to a quadratic equation and identify the solutions of a quadratic equation containing a perfect square trinomial not equal to zero.

Find the roots.

$$4x^2 - 4x + 1 = 3$$

$$(2x-1)(2x-1) = 3$$

$$\sqrt{(2x-1)^2} = \pm\sqrt{3}$$

$$2x - 1 = \pm\sqrt{3}$$

$$+1 \quad +1$$

$$\frac{2x}{2} = \frac{\pm\sqrt{3}+1}{2}$$

$$x = \frac{\sqrt{3}+1}{2}, \frac{-\sqrt{3}+1}{2}$$

IWBAT apply the zero product rule to identify the solutions to a quadratic equation and identify the solutions of a quadratic equation containing a perfect square trinomial not equal to zero.

2/10/14

As of the end of class today, you should have successfully completed all quizzes and tests for Unit 1, Unit 2, and Unit 3 sections 1-4. The last quiz in this group is 3.4.5. This will be the last "work day" in Unit 3.

Find the roots.

$$x^2 + 6x + 9 = 5$$

$(x+3)(x+3) = 5$

$\sqrt{(x+3)^2} = \sqrt{5}$

$x + 3 = \sqrt{5}$

$-3 \quad -3$

$x = +\sqrt{5} - 3$

$-\sqrt{5} - 3$

Determine the number that must be added to an expression to complete the square.

$\frac{8}{2} = 4$

$4 \cdot 4 = 16$

$x^2 + 8x = 5$

$x^2 + 8x + 16 = 5 + 16$

$(x + 4)^2 = 21$

Determine the number that must be added to an expression to complete the square.

$\frac{12}{2} = 6$ $\qquad x^2 - 12x = 2 + 36$

$6 \cdot 6 = 36$ $\qquad x^2 - 12x + 36 = 38$

Determine the number that must be added to an expression to complete the square.

$\frac{5}{2} \to \frac{5}{2} = \frac{25}{4}$

$$x^2 + 5x + 1 = 3$$

$-1 \quad -1$

$$x^2 + 5x + \frac{25}{4} = 2 + \frac{25}{4}$$

What is the rule?

$x^2 + 8x = 5$ $\left(\frac{8}{2}\right)\left(\frac{8}{2}\right)$

$x^2 - 12x = 2$ $\left(\frac{12}{2}\right)\left(\frac{12}{2}\right)$

$x^2 + 5x + 1 = 3$ $\left(\frac{5}{2}\right)\left(\frac{5}{2}\right)$

How do we find c?

$ax^2 + bx + c$

$a = 1$ $\quad c = \left(\frac{b}{2}\right)^2$

3.5 Completing the Square

2/11/14

IWBAT identify the solutions to a quadratic equation by completing the square algebraically. I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

Solve via completing the square

$$x^2 + 6x = 5$$

$$x^2 + 6x + 9 = 5 + 9$$

$$\sqrt{(x+3)^2} = \sqrt{14}$$

$$x + 3 = \pm\sqrt{14}$$

$$-3 \quad -3$$

$$x = +\sqrt{14} - 3$$

$$-\sqrt{14} - 3$$

IWBAT identify the solutions to a quadratic equation by completing the square algebraically.

Solve via completing the square

$$x^2 + 10x + 5 = 0$$

$-20 \quad +20$

$x^2 + 10x + 25 = 20$

$\sqrt{(x+5)^2} = \sqrt{20}$

$x + 5 = \pm\sqrt{20}$

$-5 \quad -5$

$x = \sqrt{20} - 5$

$-\sqrt{20} - 5$

IWBAT identify the solutions to a quadratic equation by completing the square algebraically.

Solve via completing the square

$$x^2 - 14x + 40 = -5$$

$$-40 \quad -40$$

$$x^2 - 14x + 49 = -45 + 49$$

$$\sqrt{(x-7)^2} = \sqrt{4}$$

$$x - 7 = \pm 2$$

$$+7 \quad +7$$

$$x = 9, 5$$

IWBAT identify the solutions to a quadratic equation by completing the square algebraically.

Solve via completing the square

$$2x^2 + 20x + 40 = 31$$

$$x^2 + 10x + 20 = \frac{31}{2}$$

$$+5 \qquad +\frac{5}{1}\cdot\frac{2}{2}$$

$$x^2 + 10x + 25 = \frac{41}{2}$$

$$\sqrt{(x+5)^2} = \pm\sqrt{\frac{41}{2}}$$

$$x + 5 = \pm\sqrt{\frac{41}{2}}$$

$$-5 \qquad -5$$

$$x = +\sqrt{\frac{41}{2}} - 5$$

$$-\sqrt{\frac{41}{2}} - 5$$

IWBAT identify the solutions to a quadratic equation by completing the square algebraically.

3.5 Completing the Square

2/11/14

Vocabulary 3.5.1 p. 23
Practice problems 3.5.2

Complete quizzes 3.5.3 & 3.5.4.

IWBAT identify the solutions to a quadratic equation by completing the square algebraically.

$c = \left(\frac{b}{2}\right)^2$

Determine the number that must be added to an expression to complete the square.

$ax^2 + bx + c$

I. $x^2 - 7x = 9$

$\left(\frac{-7}{2}\right)^2 = \frac{49}{4}$

II. $2x^2 + 4x = 8$

$2(x^2 + 2x + \_\_) = 8$

$+2$

III. $x^2 + 6x - 1 = 0$

$+9$

IV. $3x^2 - 9x + 6 = 7$

$3(x^2 - 3x + 2) = 7$

$-2 \quad -6$

$3(x^2 - 3x + \_\_) = 1$

$\frac{9}{4}$

$+\frac{27}{4}$

Solve via completing the square

$C = \left(\frac{b}{2}\right)^2$

$x^2 + 10x = -9$

$+25 \quad +25$

$x^2 + 10x + 25 = 16$

$(x+5)^2 = 16$

$\sqrt{\quad} \quad \pm\sqrt{\quad}$

$x + 5 = \pm 4$

$-5 \quad -5 \quad -4 \quad -5$

$x = -1, -9$

IWBAT identify the solutions to a quadratic equation by completing the square algebraically.

Solve via completing the square

$$x^2 + 6x + 10 = 17$$

$-10 \quad -10$

$x^2 + 6x + 9 = 7$ (+9)

$\sqrt{(x+3)^2} = \pm\sqrt{16}$

$x + 3 = \pm 4, -4$

$-3 \quad -3 \quad -3$

$x = 1, -7$

IWBAT identify the solutions to a quadratic equation by completing the square algebraically.

Solve via completing the square

$$x^2 + 10x + 20 = 31$$ +5

$x^2 + 10x + 5 = 36$

$x^2 + 10x + 25 = 36$

$(x+5)^2 = \sqrt{36}$

$x + 5 = 6, -6$

$-5 \quad -5 \quad -5$

$x = 1, -11$

IWBAT identify the solutions to a quadratic equation by completing the square algebraically.

Vocabulary 3.5.1 p. 23
Practice problems 3.5.2

Complete quizzes 3.5.3 & 3.5.4.

IWBAT identify the solutions to a quadratic equation by completing the square algebraically.